



**UNITED STATES DEPARTMENT OF COMMERCE
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/800,266	02/13/97	BUTNARU	P-5289.3

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MM41/0512

EXAMINER
NGUYEN, L

ART UNIT
2837

PAPER NUMBER

DATE MAILED: 05/12/99

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

08/800,266

Applicant(s)

BUTNARU

Examiner

Linh Nguyen

Group Art Unit

2857



☐ Responsive to communication(s) filed on _____.

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-30 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-4, 7, 9-24, and 26-30 is/are rejected.

☒ Claim(s) 5, 6, 8, and 25 is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____.

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 2

☐ Interview Summary, PTO-413

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-2,4,11-13, 15-16,18-22,29-30 are rejected under 35 U.S.C. 102(b) as being anticipated by Furukawa (U.S. 5,051,735), hereafter Furukawa.¹

Furukawa teaches a heads-up display system and its corresponding steps comprising of:

- “orientation sensing means for providing positional change information ... “ and “ first sensing a baseline position..” (Fig. 5, col. 1, lines 35-39, col.8, lines 42-45).
- “data acquisition means to acquire positional change ...” and “ second sensing a position change...” (Fig. 5, col. 2,lines 59-68, col.3, lines 1-12).

¹ For further ease in understanding this rejection, similar claims are grouped together; i.e. like independent claims are addressed together and like dependent claims may be grouped accordingly.

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- “data processing means for determination of a relative positional change “ and “computing a relative amount...” (Fig. 5, col.2, lines 50-61, col.8, lines 46-49).
- “display means for presenting to user a set of visual cues indicative of relative positional change...” and “presenting relative amount of positional change...” (col.1, lines 39-45, 52-68, col.2, lines 1-5 and 51-55, col. 8, lines 50-55).
- display means comprises a liquid crystal display (col.2, 55-57).
- “visual cues comprise pitch information ...” and “sensing step comprises sensing a change in user’s pitch” (col.2, 18,67, col.7, lines 67-68, col.8, lines 1-2 and 9-19).
- “visual cues comprise roll information ...” and “second sensing step comprises sensing a change in user’s roll” (col. 2, lines 18,66, col.6, line 48, col.7, lines 50-66, col.8, lines 3-19).
- “visual cues comprise yaw information...” and “ second sensing step comprises sensing change in user’s yaw” (col.2 ,lines 66-67, col.5, line 67, col.6, lines 16-37, col.7, line 34).
- “orientation means comprises an accelerometer” and “the use of an accelerometer...” (col. 3, lines 3-4).
- “orientation means comprises a gyroscope” and “ the use of gyroscope...”(col.3, line 3).

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- “providing non-orientation information to user...” (col. 2, line 10)

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Furukawa as applied to claims 1-2,4,11-13, 15-16,18, 20-22,30 above, and further in view of Odhner et al (U.S. 5,613,022) . 1 &²

Furukawa does not disclose the orientation sensing means comprise of a magnetostrictive sensor; however, Odhner et al teach the utilization of a magnetostrictive sensor (col. 5, 45-51). It would have been obvious to one of ordinary skill in the art at the time the invention was made to recognize that by incorporating Odhner et al's usage of a magnetostrictive sensor into the

² Reason, suggestion, or motivation to combine two or more prior art references in [a] single invention may come from [the] references themselves, from knowledge of those skilled in [the] art that certain references or disclosures in [the] references are known to be of interest in [a] particular field, or from [the] nature of [the] problem to be solved”. Pro-Mold and Tool Co. V. Great Lakes Plastics Inc., 37 USPQ2d 1626 (CAFC 1996).

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system of Furukawa, one could greatly improve the orientation data sensing through the reduction of electromagnetic interference (col. 5, lines 45-51).

5. Claims 10 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Furukawa as applied to claims 1-2,4,11-13, 15-16,18, 20-22,30 above, and further in view of Yang (U.S. 5,729,366) . 1 & 2

Furukawa fails to teach a display means comprises a holographic projection; however, Yang discloses a heads-up display device for a vehicle including a holographic projection optical system composed of a transmissive holographic optical element (Abstract 1-5, col.6, 63-69,col. 7, lines6-27). It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Yang into the display means of Furukawa to obtain a projection device with an easy optical axis adjustment by virtue of a reduced number of constituted elements.

6. Claims 9,14,23,26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Furukawa as applied to claims 1-2,4,11-13, 15-16,18, 20-22,30 above, and further in view of Albrecht (U.S. 5,138,555) . 1 & 2

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Furukawa does not teach a display means comprising the projection of a series of averaged video images and Furukawa does not specifically mention the visual cues comprise of elevation information; however, Albrecht discusses the averaging process of video image signal (col. 6, lines 28-45, 61-68, col. 10, lines 3-39, col. 11, lines 7-19, 28-39) and he also discloses elevation information (col. 2, lines 29-31, col.33, lines 29-31). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Albrecht's elevation information means and method into the heads-up display system of Furukawa to convey complete and thorough positional orientation information to user; also, by integrating Albrecht's image averaging and sampling means and method into Furukawa's system, one could provide a display image with higher resolution and lower noise.

Allowable Subject Matter

7. Claims 5,6,8 and 25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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8. The following is a statement of reasons for the indication of allowable subject matter, the closest prior art on record does not show or suggest:

As per dependent claim 5, orientation sensing means is worn by user on a band affixed to the head of the user.

As per dependent claim 6, display means affixed to a pair of glasses.

As per dependent claim 8 and 25 display means comprises of a retinal scanner.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The reference of Eldridge (U.S. Patent No. 5,717,392) teaches position-responsive, hierarchically-selectable information presentation system and control program.

The reference of Jacobson (U.S. Patent No. 5,727,098) teaches oscillating fiber optic display and imager.

The reference of Wilkens (U.S. Patent No. 5,745,054) teaches method and apparatus for conformal runway alignment on a head up display.

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10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Linh Nguyen whose telephone number is (703) 305-0414. The examiner can normally be reached Tuesday-Friday from 7:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow, can be reached at (703) 308-3126.

Note that the Examiner can also be reached for informal communication via the Internet at: *lnghuyen10@uspto.gov*.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-1782.

11. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

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or faxed to:

(703) 308-7722 or

308-7724 or

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308-7382 or

305-3431 or

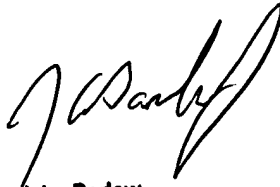
305-3432

for formal communications intended for entry, or for informal or draft communications, please label "PROPOSED" or "DRAFT".

Hand-delivered responses should be brought to Crystal Plaza 4, 2201 South Clark Place, Arlington. VA., Fourth Floor (Receptionist).

Linh Nguyen

Patent Examiner -- AU 2857



John Barlow
Supervisory Patent Examiner
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